

APPARATUS FOR HYPERLINKING IN A TELEVISION BROADCAST," filed

October 20, 2000, and identified by Attorney Docket No. WMI-004, which application is assignable to the same entity that holds assignment rights to this application.--

Please cancel claims 1-51 without prejudice.

Please add the following new claims:

In the Claims:

52. (New) A method of encoding at least a portion of an image, comprising the steps of:

- (a) defining a region of an image having pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;
- (b) analyzing axis-wise said pixels to determine sequences of pixels having substantially identical appearance;
- (c) comparing a sequence of pixels occurring along a first axis-wise traverse with a sequence of pixels occurring along a successive axis-wise traverse;
- (d) in the event that said comparison discloses two or more successive traverses having an identical number of distinct appearances in an identical progression, recording a number corresponding to the number of such successive traverses, recording for said first traverse a series of ordered pairs comprising a first value representing the appearance and a second value representing the number of successive pixels having said appearance, and recording for each successive traverse a series of values corresponding to said second value of each ordered pair;
- (e) in the event that said comparison fails to disclose two or more successive traverses having an identical number of distinct appearances in an identical progression, recording the number one and recording for said traverse a series of ordered pairs comprising a first value representing the appearance and a second value representing the number of successive pixels having said appearance; and

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(f) repeating steps (c), (d) and (e) until said pixels of said region are completely encoded.

53. (New) The method of claim 52 wherein said axis-wise traverse comprises traversing a selected one of a row and a column.

54. (New) A method of decoding an encoded image, comprising the steps of:

- (a) reading from a memory a location of a region within an image, said region defined by one or more pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;
- (b) reading from said memory a number corresponding to the number of successive traverses along one of said two non-collinear axes, said traverses having an identical number of distinct appearances in an identical progression;
- (c) reading a series of ordered pairs comprising a first value representing an appearance and a second value representing the number of successive pixels having said appearance
- (d) rendering pixels along said traverse according to said series of ordered pairs;
- (e) in the event that said number read in step (b) is greater than one, repeating a number of times equal to said number read in step (b) reduced by one the steps of:
  - (1) reading from memory a series of values corresponding to said second value of each ordered pair read in step (c); and
  - (2) for each such value read in step (e)(1), rendering a sequences of pixels corresponding to said second value, each pixel having an appearance corresponding to said first value of said ordered pair read in step (c); and
- (f) repeating steps (b) through (e) until said pixels of said region are completely rendered.

55. (New) The method of claim 54 wherein said axis-wise traverse comprises traversing a selected one of a row and a column.

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56. (New) The method of claim 54 wherein rendering a pixel comprises displaying said pixel using at least one of a color, a brightness, a blinking, a flashing, and a display mode.

57. (New) The method of claim 54 further comprising the step of recording on a computer-readable medium a representation of said rendering of pixels in said region.

58. (New) A method of encoding at least a portion of an image, comprising the steps of:

- (a) defining a region of an image having pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;
- (b) analyzing axis-wise said pixels to determine sequences of pixels having substantially identical appearance;
- (c) in the event that said analysis discloses two or more successive pixels having identical appearance, recording a series of ordered triples comprising a first value representing said appearance, a second value representing the number of successive pixels having said appearance, and a third value representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position.

59. (New) The method of claim 58 wherein defining two non-collinear axes comprises defining a row and a column.

60. (New) The method of claim 58 wherein analyzing a pixel to determine an appearance comprises analyzing for at least one of a color, a brightness, and a display mode.

61. (New) A method of decoding at least a portion of an image, comprising the steps of:

- (a) defining a region of an image having pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;

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- (b) reading a series of ordered triples comprising a first value representing said appearance, a second value representing the number of successive pixels having said appearance, and a third value representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position; and
  - (c) for each ordered triple, rendering pixels in said region using said appearance said number of successive pixels having said appearance beginning at said starting position with respect to a pixel at a known position.

62. (New) The method of claim 61 wherein defining two non-collinear axes comprises defining a row and a column.

63. (New) The method of claim 61 wherein rendering a pixel comprises displaying said pixel using at least one of a color, a brightness, a blinking, a flashing, and a display mode.

64. (New) The method of claim 61 further comprising the step of recording on a computer-readable medium a representation of said rendering of pixels in said region.

65. (New) A method of encoding at least a portion of an image, comprising the steps of:

- (a) defining a region of an image having pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;
- (b) defining pixels in said image that represent a background, said background having a characteristic background appearance;
- (d) comparing a sequence of pixels occurring along a first axis-wise traverse with a sequence of pixels occurring along a successive axis-wise traverse;
- (e) in the event that said comparison discloses two or more successive traverses having an identical number of distinct appearances in an identical progression:

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- (i) recording a number N corresponding to the number of such successive traverses;
- (ii) for the first of such successive traverses, recording for each sequence of pixels having a distinct appearance different from said characteristic background appearance an ordered triple comprising a first value representing said appearance, a second value representing the number of successive pixels having said appearance, and a third value representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position;
- (iii) for the following of said N minus one traverses, recording for each sequence of pixels having a distinct appearance different from said characteristic background appearance an ordered double comprising a first quantity representing the number of successive pixels having said appearance indicated by the first value of the ordered triple recorded for the corresponding sequence of pixels in the first traverse, and a second quantity representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position;
- (f) in the event that said comparison fails to disclose two or more successive traverses having an identical number of distinct appearances in an identical progression, recording the number one and recording for said traverse a series of ordered triples comprising a first value representing an appearance different from said characteristic background appearance, a second value representing the number of successive pixels having said appearance, and a third value representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position; and
- (g) repeating steps (c), (d) and (e) until said pixels of said region having an appearance different from said characteristic background appearance are completely encoded.

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66. (New) The method of claim 65 wherein defining two non-collinear axes comprises defining a row and a column.

67. (New) The method of claim 65 wherein analyzing a pixel to determine an appearance comprises analyzing for at least one of a color, a brightness, and a display mode.

68. (New) A method of decoding at least a portion of an image, comprising the steps of:

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- (a) defining a region of an image having pixels at locations identifiable by two non-collinear axes, each pixel having an appearance;
  - (b) defining a characteristic background appearance;
  - (c) reading from a record a number N corresponding to a number of successive traverses having an identical number of distinct appearances in an identical progression;
  - (d) if the number N is one:
    - (1) reading for said traverse a series of ordered triples comprising a first value representing an appearance different from said characteristic background appearance, a second value representing the number of successive pixels having said appearance, and a third value representing an offset defining a starting position of said two or more successive pixels with respect to a pixel at a known position; and
    - (2) for each ordered triple, rendering with said appearance said number of successive pixels having said appearance beginning at said starting position with respect to a pixel at a known position;
  - (e) if the number N is greater than one, for the first traverse, performing steps (d)(1) and (d)(2), and for each traverse of the further N minus one traverses:
    - (1) reading for each traverse a series of ordered doubles comprising a first quantity representing the number of successive pixels having said appearance indicated by the first value of the ordered triple recorded for the corresponding sequence of pixels in the first traverse, and a second

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